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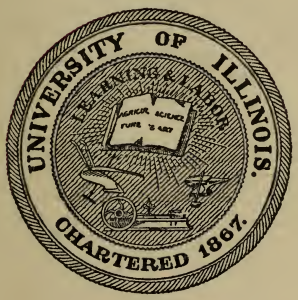

SUMMER TERM

1899

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THE GOVERNOR OF ILLINOIS,		*Ex Officio*
JOHN R. TANNER,	Springfield.	
THE PRESIDENT OF THE STATE BOARD OF AGRICULTURE,		"
WILLIAM H. FULKERSON,	Jerseyville.	
THE SUPERINTENDENT OF PUBLIC INSTRUCTION,		
ALFRED BAYLISS,	Springfield.	
ALEXANDER McLEAN,	Macomb.	Term of office expires in 1901.
SAMUEL A. BULLARD,	Springfield.	
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ALICE ASBURY ABBOTT, 353 East 41st street.	Chicago.	Term of office expires in 1905
FREDERIC L. HATCH,	Spring Grove.	
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THE UNIVERSITY CALENDAR

1899-1900.

FIRST SEMESTER.

Sept. 14, Thursday.	Entrance examinations begin.
Sept. 18, 19, Monday and Tuesday.	Registration days.
Sept. 20, Wednesday.	Instruction begins.
Nov. 6, Monday.	Latest date for announcing subjects of theses.
Nov. 30, Thursday.	Thanksgiving recess.
Dec. 23, Saturday.	Christmas recess begins.
Jan. 8, 1900, Monday.	Instruction resumed.
Feb. 2, Friday.	First semester ends.

SECOND SEMESTER.

Feb. 5, Monday.	Registration day.
Feb. 6, Tuesday.	Instruction begins.
Feb. 19, Monday.	Prize Debate.
May 16, 17, 18, Wednesday evening to Friday noon.	University High School Conference and High School Art Exhibit.
May 18, Friday.	Interscholastic Oratorical Contest.
May 19, Saturday.	Interscholastic Athletic Meet.
May 28, Monday.	Hazleton Prize Drill.
May 29, Tuesday.	Competitive Drill.
June 1, Friday.	Latest day for acceptance of theses.
June 10, Sunday.	Baccalaureate Address.
June 11, Monday.	Class Day.
June 12, Tuesday.	Alumni Day and Oratorical Contest.
June 14, Wednesday.	Twenty-ninth Annual Commencement

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1899, 1900, 1904

UNIVERSITY OF ILLINOIS

SUMMER TERM, JUNE 19 to AUGUST 18, 1899

The University will maintain a summer term of instruction, commencing on Monday, June 19, and running nine weeks, or until Friday, August 18.

WORK OFFERED.

It is not possible to present every line of work. What is given will be of the best. Each department will be in charge of the head professor of that department in the University. Where assistance is necessary it will be at hand, but the head professor of the department will be in charge.

The instruction offered will be adapted to the desires of teachers, and perhaps more particularly to the desires of teachers in the high schools. The science of education in its various phases will be emphasized. The natural and physical sciences, with special reference to the arrangement and methods of laboratories, will be provided for. The English work will be well presented, particularly the use of the language in speech and in writing, and in some measure the history and interpretation of the literature. The desires of students for Latin or mathematics will be met.

ADMISSIONS.

No examinations or other conditions will be placed upon admission. Experience, steadiness and earnestness are much desired. All, whether teachers or not, will be welcome to get what they can from the work. Those

who can meet the requirements may matriculate in the University if they desire. In that event they may be given University credits to apply upon regular courses when certified, upon examination or otherwise, by the professors in charge. University students may attend and may receive credits for work upon arrangement for the same with the head professors in charge.

FEES.

The fees will be nominal: for the term of nine weeks, $10.00; if a matriculant in the University, $6.00; the matriculation fee is $10.00. Laboratory fees will be charged, but only to cover the cost of material used. The University expects to put five dollars into the undertaking for every one it receives back.

COURSES OF WORK.

The work to be presented will be more directly indicated by the following:

PEDAGOGY.

PROFESSOR ARNOLD TOMPKINS.
ASSISTANT PROFESSOR JOHN E. MCGILVREY.

1. *The Psychology of the Teaching Process.* (a) The nature of the process and its organic elements deduced and exemplified in various subjects. (b) The science of the recitation deduced from the foregoing, including the central principles of school organization and management.

2. *The Fundamental Aim and Process in Education,* as determined by the nature of spiritual life. (a) In its subjective tension between the real and the ideal. (b) In the tension between subject and object,—the ethical aspect of education.

3. *The Logical Process Involved in Education.* (a) The universal law of thought deduced and exemplified in all the subjects of the school course. (b) The general and special methods of thought ascertained, and applied to the details of instruction in all subjects. This will require "2" to precede or accompany.

4. *The Esthetic Aspect of Education*, in relation to the ethical and logical aspects developed in "2" and "3". (a) The esthetic interpretation of the world—the process and educational value. (b) The method and value of Art and Literary interpretation. It is better for "2" and "3" to precede.

5. *Logical Method in Subjects*, including all the leading subjects in the public school course. Not a mere review, but a conscious organization and higher construction of the subject for teaching purposes. The special teachers should make more than the usual credit under this head, and under a specialist in the University, substituting the extra credits for others, "3" should precede or accompany.

6. *The Psychological Factor in Method.* (a) The psychological process of coming in touch with the outer world, and thus realizing freedom in that world. (b) The course and law of the pupil's unfolding from infancy to maturity, including the method and function of mind study in the grades and high school.

7. *The Chronological Method in Subjects*, including the growth of each subject in the mind, from the primary grades to the high school inclusive. The logical order, as discovered in "5", is to be modified by the psychological factor discussed in "6". This is a problem not only of primary methods, but of grammar-grade and high-school methods as well; and each in the light of all. Here, again, in special cases, extra credits should be made and substituted for others.

8. *The Course of Study.* (a) In its logical constitution. (b) In its psychological order, being a correlation of the results reached in "7", and based on the doctrine of interest as marking the stages of the developing life. The culture-epoch theory utilized. This is a broad generalization of all the foregoing topics.

9. *The Philosophy of School Organization and Management*, as determined by the nature of institutional life and the aim and process of education. This requires a comprehensive discussion of all the social institutions, showing that their origin, aim, method and management are fundamentally the same.

10. *The Philosophy of Education.* The ultimate principle of education developed, and applied to show how it takes care of all the details of life and school work. This is a re-interpretation of all that precedes; yet the most advanced student might well begin his course at this point.

11. *The Essential Nature and Movement of Thought*, as indicated by the history of philosophy. This is an educational interpre-

tation of the systems of philosophy from the Greeks to the present, to reinforce and clarify all previous discussions as to aim and method in thought. Required, "10".

12. *The History of Education.* The development of educational ideals, methods, and systems, as determined by their historical setting, and prevailing philosophical and sociological theories of the times. This is an educational interpretation of the philosophy of history. Required, "9", "10", and "11".

BOTANY.

PROFESSOR THOMAS J. BURRILL.

1. *Elementary Course.* A course of lectures or recitations and of laboratory work upon selected types of plants and upon special problems in plant physiology, constituting an introduction to the science and covering the topics properly included in a high school course.

2. *Plant Morphology.* To those who have had at least as much of the subject as is usually taught in good high schools with laboratory facilities, a course will be offered consisting of lectures or recitations and of laboratory work upon selected groups of plants, including algae, fungi, mosses, ferns, and flowering plants. Comparative histology will form a part of the instruction, and the preparation of objects for the microscope will be included in the laboratory work.

3. *Plant Physiology and Ecology.* For advanced students a course in vegetable physiology will be offered consisting mostly of observational and experimental studies in the laboratory and fields upon the activity of plants, their adaptations to conditions, and their interrelations in Nature.

ZOÖLOGY.

PROFESSOR STEPHEN A. FORBES.

Zoölogy will be taught in three courses, planned primarily for teachers of the public high schools. All will be laboratory courses, with a minimum amount of lecture-room instruction and illustrative reading. One of these courses will be planned and given with special reference to the needs of teachers having an equipment of microscopes at their command, and able, consequently, to select objects for study without reference to their size.

A second course will be based upon the study of animals not requiring a microscope for their examination, and a third will differ from the preceding two mainly in the fact that its materials will be drawn wholly from the class of insects. Its work will be planned with a view to making available to the high-school teacher for purposes of study and instruction, (especially for observation and experiment), the wealth of material afforded by the living insects of his neighborhood.

Either the first or the second of these courses will be accepted for a half credit toward the requirements for admission to the University, and any one of the three will be credited to any matriculated student of the University as half a minor course for one semester.

Those preferring to devote themselves to a study of aquatic biology in the field will be provided for at the Biological Station, at Havana, Ill.

CHEMISTRY.

PROFESSOR ARTHUR W. PALMER.

The instruction in chemistry will be given mainly in the laboratory, but will include occasional lectures upon such topics as can not be efficiently presented or adequately elucidated by the laboratory method alone. The chief course provided will be General Elementary Chemistry, covering much the same ground as that covered in courses offered to beginners in universities and colleges, and much as it is given in the best high schools. The laboratory work will include certain quantitative experiments which serve to illustrate the relation between the facts and the general principles of chemistry, and opportunity will be offered for practice with apparatus which is not commonly put in the hands of students, but which is used for the purpose of lecture demonstration.

Courses in qualitative analysis and quantitative analysis, or other more advanced work, may be arranged for those who have the necessary preparation.

PHYSICS.

PROFESSOR ALBERT P. CARMAN.

1. *Physical Manipulation.* A course of laboratory experiments with occasional lectures. Forty experiments have been chosen, covering the subject of elementary physics, and particular attention will be given to the preparation and arrangement of the simpler forms of apparatus. This course is designed specially for teachers of elementary physics.

2. *Advanced Physical Measurement.* A laboratory course with the more exact methods. The work is individual, and arranged to meet the needs of each student. Some previous laboratory experience is required. Special facilities will be offered for advanced work in electrical and optical measurements.

ENGLISH LANGUAGE AND LITERATURE.

PROFESSOR THOMAS ARKLE CLARK.

1. *Rhetoric and English Composition.* The work in this course will be similar to the work in rhetoric and English composition required for freshmen in the University. Its chief objects are to provide instruction in the theory and practice of English composition, and to give teachers an understanding of the methods of teaching the subject. Theory will be presented by means of a text book and lectures, while practice will be given by the writing of short themes which will be discussed in class, criticised by the instructor, and afterwards re-written or revised as circumstances require.

2. *American Literature.* The main purpose of this course will be to give students a general acquaintance with the lives and works of the chief American writers. A good deal of reading will be prescribed and much more suggested; written work will also be called for. Students will be encouraged to form their own ideas, and to express them briefly and intelligently. The course will deal with such authors as Franklin, Cooper, Hawthorne, Emerson, Longfellow, Whittier, Holmes, etc. Attention will be given to methods of teaching literature.

3. *Shakspere.* The purpose of this course is to give some insight

into the works of Shakspere, as well as to suggest methods of teaching. A comedy, a tragedy, and a historical play will be studied critically, and, if time permits, additional plays will be read rapidly and discussed. Attention will be given to the sources of the plays, the history of the times, the life of the author, etc. Rolfe's Shakspere will be used as a text.

4. *English Literature.* The purpose of this course is to present a brief survey of the whole field of English literature. Much general reading will be required, and a few masterpieces will be studied critically. Written reports on the reading will be called for. The instructor will endeavor, by frequent lectures, to acquaint the students with the chief writers and works of English literature.

LATIN.

PROFESSOR HERBERT J. BARTON.

The courses offered have been selected with a purpose of meeting the actual class-room needs of Latin teachers in the high schools, and also of those who desire to prepare themselves for more advanced work.

One or more of the authors commonly read in the high schools will be studied and a course in beginning Latin will be given, if desired. A teachers' course will also be given and special emphasis will be placed upon it. In this course, the various questions that meet the Latin teacher will be considered. Beginning with the most fundamental, a survey will be made of the most important principles, and an endeavor will be made to supplement the most common defects in Latin teaching.

For teachers desiring work in authors not read in high schools, a course in the letters of Pliny will be offered.

MATHEMATICS.

PROFESSOR GEORGE W. MYERS.

While the needs of him who pursues the study of mathematics and astronomy for their academic value will be fully met in the following courses, a pedagogic purpose will receive rather more than customary emphasis

in their presentation. Correctness of principles, no matter how simple, rather than a display of precision of results will receive chief emphasis.

1. *Geometry.* In this subject no special attention will be paid to any text-book methods of development. The customary presentation of it from the view-points implied in the sub-division into plane and solid geometry is held to be based upon unsound pedagogic principles, and this sub-division will accordingly be ignored as a controlling factor in its unfolding. The instructor will exercise a free hand, both in the choice of his points of departure and in the arrangement of his subject matter.

2. *Algebra.* The equation will be taken as a starting point and determining factor in the presentation of this subject. Graphical representations of algebraic equations will constitute an essential feature of the course. The equation will be interpreted and studied as an abridged statement of an algebraic law, and the main body of algebraic truth will be derived from these laws. This course will be within the reach of beginners in algebra, but it is believed that it may also be taken with profit by those who are already qualified to teach the subject.

3. *Trigonometry.* This will be substantially the same as that offered in the catalogue for 1898–99 under Math. 3. It will be open to any who have done as much preliminary work in algebra and geometry as is given by the better grade of high schools of the state. Students of the University may avail themselves of this course to earn, or to make up, either a two-fifths or a three-fifths credit for a semester.

LECTURES.

One hour each day will be kept free from other work for general lecture purposes. There may not be a general lecture every day, but there will be so far as may seem desirable. Hon. Alfred Bayliss, State Superintendent of Public Instruction, will open the term with an address on Tuesday, June 20. President John W. Cook, of the State Normal University, will deliver a course of five lectures on the history of education, in the week commencing June 26. Professor W. S. Jackman, of the Cook County Normal School, will deliver a course of ten

lectures on nature study in public schools, in the two weeks commencing July 24. President Draper will give four addresses on the growth, organization, and administration of the public school system. Professor Tompkins will make at least five general addresses on the philosophy of education; and Professors Burrill, Forbes, Palmer, and Myers will present several such addresses on phases of their sciences, which will be of interest to all.

LIBRARY.

The University Library will be kept open for at least a part of every day throughout the summer, and will be available to students at the summer term. A member of the Library staff will have pleasure in rendering every practicable service.

ASTRONOMICAL OBSERVATORY.

Professor Myers, the astronomer in charge, will welcome students to the Observatory and endeavor to afford them some insight into the science of astronomy.

BOARD.

Board may be obtained at the hotels in Champaign and Urbana, or in families near the University, at reasonable rates. The fact that the larger part of the usual University community will be away at the time, will make boarding accommodations plentiful. The University authorities will prepare a list of boarding places which can be recommended, and if attendants upon the summer term will report at the Registrar's office, in the Library Building, upon arrival, they will be aided in securing desirable locations,

Correspondence welcomed. Address,

W. L. PILLSBURY,
Urbana, Illinois.

THE UNIVERSITY OF ILLINOIS.

YEAR 1899-1900 OPENS SEPT. 18, 1899.

FIFTEEN Buildings, Two Hundred and Ten Instructors, Three Hundred and Fifty Different Courses of Instruction, Eighteen Hundred students

LIBRARIES, Astronomical Observatory, Laboratories, Shops, Farms; making one of the very best equipments in the United States.

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Literature and Arts,
Agriculture,
Science,
Engineering.

SCHOOLS OF
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Art and Design,
Military Science

School of Pharmacy (Chicago College of Pharmacy), 465-67 State Street, Chicago.

School of Medicine (College of Physicians and Surgeons) 813 W. Harrison Street, Chicago.

School of Law, at the University.
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GRADUATE SCHOOL.

Architecture, Civil Engineering, Electrical Engineering, Mechanical Engineering, Sanitary Engineering, Chemistry.

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One Hundred and Sixteen Free Scholarships.
Much Attention Paid to Athletics.
Men and Women Admitted on Equal Terms.
The Best Medical Preparatory Course in the United States.
Biological Experiment Station on the Illinois River.
Pedagogical Department of Marked Excellence.

The State of Illinois is behind this University, and will allow it to be second to none. Students are received from Approved High Schools on their Diplomas.

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1900

UNIVERSITY OF ILLINOIS

ANNOUNCEMENT

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1900

UNIVERSITY OF ILLINOIS

BOARD OF TRUSTEES

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FREDERIC L. HATCH,	Spring Grove.	
AUGUSTUS F. NIGHTINGALE, Schiller Building.	Chicago.	

REGISTRATION

'87–8	377
'88–9	429
'89–'90	469
'90–1	510
'91–2	583
'92–3	714
'93–4	743
'94–5	810
'95–6	855
'96–7	1075
'97–8	1585
'98 9	1824
'99-'00	2200

UNIVERSITY OF ILLINOIS

SUMMER TERM, JUNE 18 TO JULY 27, 1900

The University will continue in the summer of 1900 the Summer Term inaugurated so happily in 1899, commencing on Monday, June 18, continuing six weeks, and closing on Friday, July 27.

THE WORK

The work offered is largely in the line which experience has proved to be most in demand, viz: in pedagogy, psychology, and somewhat in the practical administration and supervision of schools; in the languages, with special emphasis upon English literature, rhetoric and composition; in the natural and physical sciences, with special reference to the arrangement and methods of laboratories; and in mathematics. Each department is in the hands of the head or a leading professor of that department in the University. The work in pedagogy is in charge of the new head of that department, Professor Edwin G. Dexter, and of Assistant Professor Stratton D. Brooks. Professor Dexter is a graduate of Brown and Columbia Universities, is now a professor in the State Normal School at Greeley, Colorado, and has been for several years director of the State Summer School at Colorado Springs. Professor Brooks, a graduate of the Michigan State Normal College, and of the University of Michigan, has recently come from the principalship of the LaSalle Township High School to the position of Assistant Professor of Pedagogy and High School Visitor in the University. The work in pedagogy and all the other work of the summer term will appeal to students, and especially to teachers, for it is of a character unexcelled any where.

ADMISSIONS

No examinations or other conditions will be placed upon admission. Experience, steadiness and earnestness are much desired. All, whether teachers or not, will be welcome to get what they can from the work. Those who can meet the requirements may matriculate in the University if they desire. In that event they may be given University credits to apply upon regular courses when certified, upon examination or otherwise, by the professors in charge. University students may attend and receive credits for work upon arranging for the same with the head professor in charge. By arrangement with the professor in charge time may be doubled or even thribbled upon any work in which the student is especially interested, and work so multiplied will be equitably credited to matriculants in the University records.

FEES

The fees will be nominal: for the term of six weeks, $10.00; if a matriculant in the University, $6.00; the matriculation fee is $10.00. Laboratory fees will be charged, but only to cover the cost of material used. The University last summer put five dollars into the undertaking for every one it received, and expects to do so again.

COURSES OF WORK

The work to be presented will be more directly indicated by the following:

BIOLOGY

(Zoology and Botany)

PROFESSOR BURRILL, PROFESSOR FORBES, PROFESSOR SMITH, MR. HOLFERTY, MR. MCCLELLAN

1. FIELD BIOLOGY. The zoölogical and botanical work of the

summer term will in part be organized in the form of a biological survey of a small carefully selected area conveniently accessible from the University. This "unit of environment," which is within two blocks of the Urbana street-car line, is about half a mile in length by somewhat less in width. It is traversed by a small stream, which is dammed at one point to make a permanent pond several acres in extent. It contains smaller ponds, one series of which have been stocked with fishes, a small marshy flat, an open grassy bottom, a strip of wooded, shrubby bottom-land, a woodland slope, several bluffy banks, and a shaded upland park.

The plant and animal life of this tract will be systematically collected and will be studied from every point of view with the aid of an ample equipment of field and laboratory apparatus. The various forms of life will be examined in place with reference to their local distribution, the features of their environment, and their relations to each other and to surrounding nature. By the use of breeding-cages, aquaria, conservatory facilities, and the like, habits and life histories will be studied. Systematic notes and records will be kept; drawings will be made; and results will be formulated at the end of the term by each student in a way to show the outcome of his work, and by the instructors to show the general product of the entire survey. The material for ordinary laboratory studies will be drawn from these collections, the whole course being planned as a combination of the methods and objects of the biological station with those of the biological laboratory. It will have the great advantage to teachers of biology that its methods will be applicable to any unit of any environment, and that it will consequently open the way to a serious and systematic study of any selected area within the reach of a public school. This subject will be taught in two courses, one botanical and the other zoölogical, which may be taken together or independently.

2. BOTANY. *Elementary Course.* A course of lectures or recitations and of laboratory work upon selected types of plants and upon special problems in plant physiology, constituting an introduction to the science and covering the topics properly included in a high school course.

3. BOTANY. *Advanced Course.* To those who have had at least as much of the subject as is taught in well equipped high schools,

there is offered advanced instruction and laboratory facilities, together wtth an opportunity for such field work as the chosen subject requires. For matriculated students this work may count towards graduation.

4. Invertebrate Zoology. This course will be devoted primarily to a series of laboratory studies of invertebrate types selected to include the forms most generally available for high school work. The collection and preparation of specimens and the use of the literature and apparatus of the subject, and a discussion of pedagogical methods applicable to the high school will be made prominent in this course.

5. Vertebrate Zoology. Similar in character and purpose to the preceding course, but limited to the vertebrate forms. Methods of injection and dissection will be taught, and practice will be given in the use of keys and manuals for the determination of species.

Either of the two courses in zoölogy may be taken separately or both may be taken together. For students desiring university credit a course of related reading will be outlined, upon which, together with the laboratory work, an examination may be had at the end of the session. Volunteer evening quizzes upon the work of these courses will be offered to students preparing for examination.

CHEMISTRY

Professor Grindley

1. Elementary Chemistry. A course in general elementary chemistry consisting mainly of laboratory work but including occasional lectures and recitations. The laboratory work will include a number of quantative experiments which serve to illustrate the relation between the facts and general principles of chemistry. This course is especially arranged for beginners.

2. Advanced Elementary Chemistry. This course is especially adapted to the needs of teachers of elementary chemistry, and such selection and modification of the work will be made as may best suit the purpose of the individual teacher. In this course opportunity will be offered for practice in the use of apparatus which is not commonly put in the hands of students, but which is used for the purpose of lecture demonstration.

3. Qualitative Analysis. A course consisting chiefly of laboratory work and including a study of the general principles upon which analytical chemistry is based. The work will consist in the determination of the elementary constituents of a number of simple unknown substances. Analysis will also be made of more complex substances, including natural and commercial products.

In addition to the above courses, special facilities will be offered for work in more advanced courses, as quantitative analysis, organic chemistry, etc., to students who have the necessary preparation.

PHYSICS

Professor Sager, Mr. Carpenter

1. Elementary Physics. A course consisting of laboratory work and recitations. The experimental work will be quantitative in character and is designed to give the students an acquaintance with the methods of elementary physical measurements and also to prepare them for teaching the subject in secondary schools. The laboratory is excellently equipped with apparatus and every facility will be accorded for the effective prosecution of this work. There will be three laboratory exercises each week, the length of each being from two to three hours. In the recitation work a standard text on elementary physics will be followed. The subject will be illustrated by examples and problems which will definitely fix in mind the principles discussed.

2. Advanced Elementary Laboratory Work. To those who are sufficiently familiar with the elementary theory and have done the requisite amount of laboratory work, a course of more advanced measurements in mechanics, heat, light, electricity and magnetism is open. The equivalent of five laboratory periods of three hours each per week will be expected in this course.

PEDAGOGY

Professor Dexter, Professor Brooks

1. The Study of Education as a Science. The meaning of education. The aim of education. The presuppositions of education. The factors in education. Stages in the development of the self-conscious mind. The formal education of the will. Education through play. The feelings in education. The re-

ligious element in education. Imitation in mental development. Suggestion in education. Habit in education. The development of the child-mind.

2. A Course of Eighteen Lecture or Labortary Periods, to be given in the psychological laboratory. In it will be considered both the phylogenetic and ontogenetic development of the organs of sense, their importance in the educational processes, the means for increasing their usefulness, and a study of their hygiene in its application to school work. The apparatus of the laboratory will be fully used both for demonstration and individual experiments.

3. High School Organization and Government Development of the modern high school. Present conditions in Illinois and desirable lines of progress. The problem of course building discipline. Relation of temperament to discipline. Program making, classification, etc.

4. Methods in High School Work. General principles. Common errors. Special methods in science, English, history, mathematics and languages. Laboratory and library equipment. Details of high school work.

ENGLISH LANGUAGE AND LITERATURE

Professor Clark, Miss Carson

1. Rhetoric and English Composition. The work in this course will be similar to the work in English composition required for freshmen in the University. Its chief objects are to provide instruction in the theory and practice of English composition, and to suggest something of the methods of teaching the subject. Theory will be presented by means of a text book and lectures, while practice will be given by the writing of numerous themes which will be discussed in class, criticised by the instructor, and afterwards re-written or revised as circumstances require.

2. American Poetry. The main purpose of this course will be to give the students an acquaintance with the life and works of six representative writers of poetry. The course will deal with Poe, Bryant, Whittier, Longfellow, Lowell and Holmes. Considerable reading will be prescribed and much more suggested; written work will also be called for. Students will be encouraged

to form their own ideas and to express them briefly and intelligently.

3. SHAKSPERE. The course will attempt to give some general insight into the works of Shakspere, rather than to make a detailed critical study of a few of the plays. A number of the plays will be read rapidly and discussed. Rolfe's Shakspere will be used as a text.

4. ENGLISH PROSE WRITERS OF THE NINETEENTH CENTURY. An attempt will be made to give the students some acquaintance with the works of De Quincey, Macaulay, Carlyle, Newman, Matthew Arnold, and Ruskin. Selections from these writers will be analyzed as to both thought and style, and additional reading will be prescribed. Written reports on reading will be required.

LATIN

PROFESSOR BARTON

The courses offered have been selected with the purpose of meeting the actual class-room needs of Latin teachers in the high schools. Experience has shown that a large number of teachers desire to review a preparatory book in Latin. A class will thorefore be formed in the first year's work, and since the progress will be rapid, a very excellent opportunity is here presented for beginners to make substantial progress.

A COURSE IN CÆSAR will also be offered. Speed will not be sacrificed to thoroughness, but still a good amount of ground can be covered. Unless a majority of the students should wish otherwise, the work will probably begin at book two of the Gallic War.

COURSES IN CICERO AND VERGIL may also be offered. This will depend on the number desiring to do the work. Should teachers desire work in authors not commonly read in the high schools, a course in the odes of Horace will be offered. Students desiring such advanced work are especially urged to communicate with the instructor before the opening of the term.

MATHEMATICS AND ASTRONOMY

PROFESSOR MYERS, MR. BRENKE

1. ELEMENTARY ALGEBRA. This course will be conducted with chief reference to the needs of high school teachers of algebra, though credit in it will be accepted for admission into the University. More emphasis will be placed upon pedagogical

phases of the subject than is done in regular preparatory courses in algebra. The work will be given by lectures, text-book assignments and collateral reading.

2. PLANE TRIGONOMETRY. In this course considerable stress will be laid upon the applications of the subject to the solution of practical problems in surveying. So far as practicable, students will be required to illustrate theoretical results by the reduction of data taken by them with extemporized apparatus and with some of the simpler civil engineering instruments. It is thought the course will be helpful in suggesting what may be done in high school laboratory courses in geometry and trigonometry without expensive equipment. A credit in this subject will be accepted for mathematics 4 of the regular University curriculum.

3. OBSERVATIONAL ASTRONOMY. The laboratory method of presentation will be exclusively used in this course. Direct observational studies of celestial phenomena will be made with the naked eye, with extemporized apparatus and with the instruments of the Observatory. The following topics will indicate the nature of the subjects to be studied: The geography of the heavens, plotting of meteor paths, identification and study of particularly interesting heavenly bodies, such as the brighter stars, variables, doubles, clusters, nebulæ, planets, etc. A good text will be used for reference purposes. It is believed the course will be practically helpful to all teachers of the observational sciences in indicating lines of useful scientific work which may be done with profit in high schools without elaborate equipment. Credit in this course will be accepted for three semester hours of University work in astronomy.

GENERAL LECTURES

The hour from eleven to twelve each day will be reserved for general lectures. These may be expected from Hon. Alfred Bayliss, State Superintendent of Public Instruction; President John W. Cook, of the Northern Illinois State Normal School; President Arnold Tompkins, of the State Normal University; President T. C. Lord, of the Eastern Illinois State

Normal School, and the President and many of the head professors of the University of Illinois.

LIBRARY

The University library will be kept open for at least a part of every day throughout the summer, and will be available to students at the summer term. A member of the library staff will have pleasure in rendering every practicable service.

ASTRONOMICAL OBSERVATORY

Professor Myers, the astronomer in charge, will welcome students to the Observatory and endeavor to afford them some insight into the science of astronomy.

UNIVERSITY GYMNASIUMS

The gymnasiums, for men and for women, will be open for the use of students at least a part of each day during the term.

BOARD

Board may be obtained at the hotels in Champaign and Urbana, or in families near the University, at reasonable rates. The fact that the larger part of the usual University community will be away at the time, will make boarding accommodations plentiful. The Young Men's and Young Women's Christian Associations of the University will prepare a list of boarding places which can be recommended, and if attendants upon the summer term will report at the Registrar's office, in the Library Building, upon arrival, they will be aided by representatives of the Associations in securing desirable locations.

Correspondence welcomed. Address,

W. L. PILLSBURY, Registrar,
Urbana, Illinois.

UNIVERSITY OF ILLINOIS

DEGREES

1. In the COLLEGE OF LITERATURE AND ARTS the degree of Bachelor of Arts (B.A.) in four year courses, as follows:

   1. General courses, offering a wide range of electives and classified according to the principal line of work chosen.
   2. Specialized courses, or courses under the group system, including (a) The Classical Group, (b) The English Group, (c) The German and Romanic Language Group, (d) The Latin and Modern Language Group, (e) The Philosophical Group, (f) The Political Science Group.

2. In the COLLEGE OF ENGINEERING the degree of Bachelor of Science (B.S.) in four year courses, as follows: (1) In Architecture, (2) in Architectural Engineering, (3) in Civil Engineering, (4) in Electrical Engineering, (5) in Mechanical Engineering, (6) in Municipal and Sanitary Engineering, (7) in Railroad Engineering.

3. In the COLLEGE OF SCIENCE the degree of Bachelor of Science (B.S.) in four year courses, grouped as follows: (1) The Chemical and Physical Group, (2) the Mathematical Group, (3) the Natural Science Group, (4) the Philosophical Group.

4. In the COLLEGE OF AGRICULTURE the degree of Bachelor of Science (B.S.) in four year courses, distributed in departments of—(1) Field Agriculture, (2) Animal Husbandry, (3) Veterinary science, (4) Dairy Husbandry, (5) Horticulture.

5. In the COLLEGE OF MEDICINE (College of Physicians and Surgeons, Chicago,) the degree of Doctor of Medicine (M.D.) in a four year course in medicine.

6. In the COLLEGE OF LAW the degree of Bachelor of Laws (LL.B.) in a three year course in law.

7. In the SCHOOL OF LIBRARY SCIENCE the degree of Bachelor of Library Science (B.L.S.) in a four year course.

8. In the SCHOOL OF MUSIC the degree of Bachelor of Music (B.M.) in four year courses in vocal and instrumental music.

9. In the SCHOOL OF PHARMACY (Chicago College of Pharmacy) the degree of Graduate in Pharmacy (Ph.G.) in a two year course, and that of Pharmaceutical Chemist (Ph.C.) in a three year course in Pharmacy.

10. In the GRADUATE SCHOOL the Master's degree after the Bachelor's degree for one year of graduate work in arts, science, architecture; the degree of Civil Engineer (C.E.), Electrical Engineer (E.E.), and Mechanical Engineer (M.E.), after that of B.S. for one year of graduate work in the respective engineering courses; and the degree of Doctor of Philosophy (Ph.D.) for three years of graduate work leading thereto.

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ERSITY OF ILLINOIS BULLETIN

Vol. 1 DECEMBER 1, 1903 No. 5

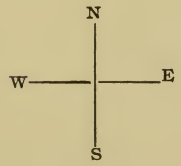
[Entered at Urbana, Illinois, as second-class matter]

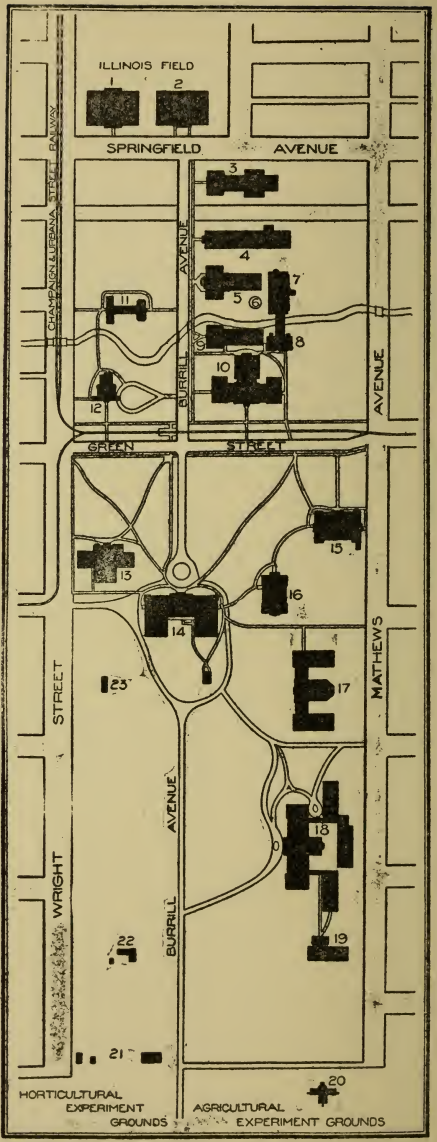
THE UNIVERSITY OF ILLINOIS

SUMMER SESSION

PUBLISHED FORTNIGHTLY BY THE UNIVERSITY

1 Me s Gymnasium
2 Armory
3 Wood Shop
4 Metal Shops
5 Electrical Laboratory
6 Reservoir
7 Heating Plant
8 Heating Plant
9 Testing Laboratory
10 Engineering Building
11 Greenhouse
12 President's House
13 Library Building
14 University Hall
15 Natural History Hall
16 Law Building
17 Chemistry Building
18 Agricultural Buildings
19 Horticultural Bldg.
20 Observatory
21 Warehouse
22 Veterinary Building
23 Insectary





THE UNIVERSITY OF ILLINOIS

SUMMER SESSION

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UNIVERSITY OF ILLINOIS

CALENDAR

SUMMER SESSION

June 13, 1904, Monday.	Registration Day.
July 4, Monday.	Holiday.
July 22, Friday.	Examination for six-weeks courses and for all who can not stay the full session.
Aug. 11 and 12, Thursday and Friday.	Final Examinations.

FIRST SEMESTER

Sept. 7-10, 1904, Wednesday-Saturday.	Entrance Examinations.
Sept. 12 and 13, Monday and Tuesday.	Registration Days.
Sept. 14, Wednesday.	Instruction begins.

REGISTRATION OF STUDENTS

'89–'90	469
'90–'91	510
'91–'92	583
'92–'93	714
'93–'94	743
'94–'95	810
'95–'96	855
'96–'97	1075
'97–'98	1585
'98–'99	1825
'99–'00	2234
'00–'01	2505
'01–'02	2950
'02–'03	3288
'03–'04	4000

OFFICERS OF THE SUMMER SESSION 1904

UNIVERSITY COUNCIL OF ADMINISTRATION

ANDREW SLOAN DRAPER, LL.D., President of the University.

THOMAS JONATHAN BURRILL, Ph.D., LL.D., Vice-President and Dean of the Graduate School.

NATHAN CLIFFORD RICKER, D. ARCH., Dean of the College of Engineering.

STEPHEN ALFRED FORBES, Ph.D., Dean of the College of Science.

DAVID KINLEY, Ph.D., Dean of the College of Literature and Arts.

EUGENE DAVENPORT, M. AGR., Dean of the College of Agriculture.

OLIVER ALBERT HARKER, A.M., Dean of the College of Law.

WILLIAM A. QUINE, M.D., Dean of the College of Medicine.

VIOLET DELILLE JAYNE, A.M., Dean of the Woman's Department.

THOMAS ARKLE CLARK, B.L., Dean of Undergraduates and Assistant to the President. Director of the Session. Office, Library Building.

SAMUEL WALTER SHATTUCK, C. E., Business Manager. Office, Library Building.

WILLIAM LOW PILLSBURY, A.M., Registrar. Office, Library Building.

FACULTY

THOMAS ARKLE CLARK, B.L., DEAN OF UNDERGRADUATES AND ASSISTANT TO THE PRESIDENT. Professor of Rhetoric. DIRECTOR. *928 West Illinois street, U.*

ARTHUR WILLIAM PALMER, Sc.D., Professor of Chemistry. *1013 California avenue, U.*

EDWIN GRANT DEXTER, PH.D., Professor of Education. *903 West Green street, U.*

WILLIAM EDWARD SIMONDS, PH. D., Professor of English Literature (*Knox College*).

HENRY JOHNSON, A.M., Professor of History (*Eastern Illinois State Normal School*).

FRANK SMITH, A.M., Assistant Professor of Zoology. *913 West California avenue, U.*

MATTHEW BROWN HAMMOND, PH.D., Assistant Professor of Economics. *904 South Busey avenue, U.*

EDWARD FULTON, PH.D., Assistant Professor of Rhetoric. *1014 West Oregon street, U.*

CHARLES FREDERICK HOTTES, PH.D., Assistant Professor of Botany. *915 West California avenue, U.*

NEIL CONWELL BROOKS, PH.D., Assistant Professor of German. *705 West Green street, U.*

EDWARD JOHN LAKE, B.S., Assistant Professor of Art and Design. *311 West Columbia avenue, C.*

NATHAN AUSTIN WESTON, PH.D., Assistant Professor of Economics. *604 West Healy street, C.*

BENJAMIN WITMER BRENEMAN, Assistant Professor of Voice Culture. *1012 West California avenue, U.*

HORACE ADELBERT HOLLISTER, A.M., Assistant Professor of Education. *719 West Hill street, C.*

ARTHUR GRAHAM HALL, PH.D., Assistant Professor of Mathematics. *911 West California avenue, U.*

FOSTER HEATHCOTE IRONS, Supervisor of Manual Training (*City of Superior, Wisconsin, Schools*).

WILLIAM CHARLES BRENKE, M.S., Instructor in Mathematics. *1005 West Oregon street, U.*

MARTHA JACKSON KYLE, A.M., Instructor in Rhetoric. *502 South Goodwin avenue, U.*

HENRY LIVINGSTON COAR, Ph.D., Instructor in Mathematics. *930 West Illinois street, U.*

JOHN LANGLEY SAMMIS, M.S., Instructor in Chemistry. *307 East Springfield avenue, C.*

KENNETH PERCIVAL RUTHERFORD NEVILLE, Ph.D., Instructor in Latin and Greek. *401 East Green street, C.*

FLORENCE NIGHTINGALE JONES, A.M., Instructor in French. *917 West California avenue, C.*

HARRY G PAUL, A.M., Instructor in English. *609 West Green street, U.*

CLARENCE WALWORTH ALVORD, A.M., Instructor in History. *1101 West California avenue, U.*

ALBERT ROOT CURTISS, Instructor in Wood Shop. *1005 West Green street, U.*

EUNICE DEAN DANIELS, Instructor in Piano. *913 West Illinois street, U.*

JAMES FRANKLIN KABLE, B.S., Instructor in General Engineering Drawing. *706 South Second Street, C.*

FLOYD ROWE WATSON, Ph.D., Instructor in Physics. *917 West California avenue, U.*

GEORGE FOSS SCHWARTZ, A.B., M.B., Instructor in Violin and Theory. *1101½ West California avenue, U.*

JOEL STEBBINS, Ph.D., Instructor in Astronomy. *1009 South Wright street, C.*

WILLIAM FREDERICK SCHULZ, E.E., Instructor in Physics. *1301 West Springfield avenue, U.*

AMOS WILLIAM PETERS, Ph.D., Instructor in Zoology. *706 West Green street, U.*

WILLIAM SALISBURY BALLARD. Assistant in Botany. *511 John street, C.*

LECTURES

A series of general lectures will be offered during the session by some of the best known men of the country. These lectures will be of interest to a large majority of the students, and will extend practically throughout the session.

Professor Paul Henry Hanus, S. B., of Harvard University, will give a series of daily lectures during the first three weeks of the session on educational topics. Professor Hanus is one of the best known men in the country, and his lectures should attract many teachers to the session.

Professor J. V. Denney, of the Ohio State University, whose work in English Composition, in connection with Professor Scott of Michigan, is so familiar to all teachers of English, will give a series of lectures on English. The subjects of those lectures are presented below:

(*a*) Literature in the Common Schools. (*b*) English as a Discipline. (*c*) Present Tendencies in Criticism. (*d*) Emerson as a Social Force. (*e*) The Relation of Literature to Religion.

Superintendent Calvin N. Kendall, of the Indianapolis, Indiana, schools will give a series of lectures on the general subject, "The Relation of the Superintendent to Schools and Teachers." Superintendent Kendall is a man of thorough training and broad experience. He has formerly been superintendent of schools in New Haven, Connecticut, in Saginaw, and in Jackson, Michigan. He has college degrees both from Hamilton College and Yale University. A statement of his topics is given below:

(*a*) Educational Ideas of the Superintendent. (*b*) What Makes a Good School. (*c*) The Selection and Appointment of Teachers. (*d*) The Superintendent's Relation to and Work with the Board of Education. (*e*) Influencing Public Sentiment. (*f*) Waste in Education. (*g*) The Purpose of School Visitation. (*h*) The Best Use of the Superintendent's Time. (*i*) How to Build up a Teaching Force. (*j*) The Course of Study.

Other prominent men, whose names can not yet be announced, will give special lectures on History, Science and Education.

GENERAL STATEMENT

The summer session of the University of Illinois for the year 1904 will open June 13 and close August 12, making a term of nine weeks. This is equivalent to one fourth of the regular University year, and credit will be given on that basis. The opening day will be devoted to registration. Examination for those desiring credit for the work will be held on Thursday and Friday, August 11 and 12. Examination in some of the courses may be had at the end of six weeks by those who find it impossible to remain during the whole session. Instruction begins on June 14 and closes on August 10. The exact amount of credit given for each course is stated in connection with the outline of courses given later in this announcement. Excepting under very unusual conditions, students will not be allowed to carry more than nine hours of work.

PURPOSE

The purpose of the Summer Session is to give to those who can not well attend during the regular college year, an opportunity to do advanced work. Leading instructors, both from the University corps of teachers and outside of it, have charge of the courses, so that the character of the instruction offered is as high as that during the regular college year.

Most of the courses are intended for students who wish to pursue work for a bachelor's or a master's degree in the University, and are so arranged that students may

specialize in a single subject, if it seems desirable, devoting their whole time to it. A few are for students who are preparing to enter the University, or who wish to make up deficiencies in work of a preparatory grade. Some courses, also, have been especially arranged for the purpose of aiding those who teach or who wish to prepare themselves to teach in high schools, academies, and other schools. Methods of teaching will be treated in nearly all of the courses.

FEES

A tuition fee of twelve dollars ($12) is required of all students in regular attendance at the session. This entitles one to admission to regular courses and to all special lectures. An extra laboratory fee in some courses is charged for materials used, and the regular fee is required of students in music. Any single course may be taken for a fee of six dollars ($6) and the laboratory fee, if there be any in connection with the course taken.

REGISTRATION

Students will present themselves for registration at the Library Building on Monday, June 13, between the hours of 8 a. m. and 4 p. m. After consultation with the instructors in the various departments, study blanks will be filled out, submitted to the director for approval, and filed with the registrar. The tuition and other fees are due upon registration.

Explanation of abbreviations used.

"S," which is prefixed to each of the courses offered, means "summer" and is used to distinguish such courses from those of the same number offered during the regular college year.

"E" indicates those courses not of college grade and for which entrance credits are given.

The number in parenthesis after each course indicates the number of hours' credit given. Two and one-half hours are here equivalent to one entrance credit.

OUTLINE OF COURSES

ART AND DESIGN

Mr. LAKE

S E 1. ELEMENTARY.—A course in form drawing from nature and from models. This course is arranged to meet the needs of the teacher or of the student who wishes to learn to draw as an aid to his other work. The special teacher of drawing will also find it of value. Blackboard illustration will be made a feature of the course. No preparation will be expected for entrance to this class. *Daily; two periods;* (*2*).

S 2. MONOCHROME.—Instruction in pencil, pen and ink, crayon, charcoal, or wash drawing will be offered students who desire to make a specialty of the black and white mediums in illustration. *Daily; two periods;* (*2*).

ASTRONOMY

Dr. STEBBINS

S 1. ELEMENTARY ASTRONOMY.—This is a course for beginners, and does not require mathematics. From lectures and the text, the student will be given a general view of the subject, and this class room work will be supplemented by direct observation of the sky. Besides identifying the principal constellations, each student will follow such changes as the motions of the moon and planets, and the fluctuations of the variable stars. Some simple work will be done with the instruments of the Observatory but emphasis will be laid on those observations which can be made without apparatus, and which the student can do in after life. *Daily;* (*3*).

S 2. PRACTICAL ASTRONOMY.—This course is designed to give the student some familiarity with the principal astronomical instruments and the methods of employing them in research. It may be undertaken by those who have not had a course in general astronomy; but the student must have a working knowledge of plane trigonometry and the use of logarithims. The work with the instruments will be done mostly in the evening. *Daily;* (*3*).

BOTANY

Assistant Professor HOTTES, Mr. BALLARD

S E 1. ELEMENTARY COURSE.—Intended for those beginning the science as a laboratory and field subject. The work includes an elementary study of flowering and a few types of flowerless plants; collection, identification, and classification; ecology of the relations to the environment; propogation and dissemination. *Daily; two periods;* (*2 1-2*). Assistant Professor HOTTES.

S 2. PLANT ANATOMY AND PHYSIOLOGY.—A study of cells and tissues and their development into organs, and experimental studies of living plants in action. The apparatus set up and used in the course is intended to be such as is well adapted for high school work. Lectures and laboratory work. *Daily; two periods*; (*2 1-2*). Assistant Professor HOTTES.

Required: Course S E 1, or an equivalent.

S 3. ADVANCED WORK.—Provision will be made for those who are capable of pursuing by laboratory methods studies of an advanced grade. In this there will be no class organization and no formal lectures but abundant opportunity will be offered for work under supervision, and for consultation of the pertinent literature. *Daily; two periods;* (*2 1-2*). Assistant Professor HOTTES.

CHEMISTRY

Professor PALMER, Mr. SAMMIS

S E 1. ELEMENTARY CHEMISTRY.—A course in general elementary chemistry consisting chiefly of recitations and laboratory work. The laboratory work will include a number of quantative experiments which serve to illustrate the relation between the facts and the general principles of chemistry. Five semester hours in this subject will be accepted for Chemistry 1 of the regular University curriculum. Any credits made in this course may be applied in fulfilling the requirements for admission to the University. Newth's Inorganic Chemistry. *Daily; two or four periods;* (*2 1-2 or 5*) Professor PALMER, Mr. SAMMIS.

S 2. ADVANCED COURSE FOR TEACHERS.—This course is especially adapted to the needs of teachers of elementary chemistry, and such selection and modification of the work will be made as may best suit the purpose of the individual teacher. The student will be taught how to make simple but effective apparatus for use in the lecture room and in the laboratory for demonstrating and illustrating the

facts and principles of chemistry, and those who prove themselves competent and careful will be granted the use of apparatus which is not commonly put into the hands of students, but which is used for the purpose of lecture demonstrations. Such students, upon attending the lectures and recitations of course S E 1, may occasonally, if desirable, be given opportunity to take charge of the quiz work of the elementary course under the supervison of the instructor. Students who do the assigned work of this course in a creditable manner, and who attend the class work of the course in elementary chemistry, will be given University credit for Chemistry 1. This course is open to teachers of chemistry only, and to those only by special arrangement with the instructor. *Daily; two periods;* (*2 1-2*). Professor PALMER, Mr. SAMMIS.

S 3. QUALITATIVE ANALYSIS. A course consisting mainly of laboratory work, but also including lectures and recitations. The laboratory work will consist in the determination of the elementary constituents of a number of simple unknown substances, and in the analysis of more complex substances, including natural and commercial products. The class work will include a study of the general principles upon which analytical chemistry is based. This course may be taken for credits amounting to two and one-half or five semester hours, and such credits will be accepted for the regular University courses known as Chemistry 3b, and Chemistry 3a. *Daily; two or four periods;* (*3 or 5*). Professor PALMER, Mr. SAMMIS.

DRAWING, GENERAL ENGINEERING

Mr. KABLE

1a. LETTERING.—Plain and ornamental alphabets; free-hand and mechanical lettering; titles and title pages. *Phillips and Kable's Freehand Lettering. Daily; three periods;* (*1*).

1b. ELEMENTS OF DRAFTING.—Geometrical constructions; orthographic, isometric, and cabinet projections. *Tracy's Mechanical Drawing. Daily; three periods;* (*3*).

Required: Drawing, General Engineering 1a.

1c. SKETCHING AND WORKING DRAWINGS. — Architectural sketch plans and details; bridge details; machines, machine parts, and mechanism; working drawings; drawings finished in color and right line shading. Lectures on drafting instruments, materials; computing instruments, office methods, and reproduction processes. *Lectures and notes. Daily; three periods;* (*1*).

Required: Drawing, General Engineering 1a, 1b.

2. Descriptive Geometry.—Problems relating to the point line, and plane. The generation and classification of lines and surfaces; planes tangent to surfaces of single and double curvature; intersections; developments, and revolutions. *Church's Descriptive Geometry. Daily; three periods;* (*5*).

Required: Drawing, General Engineering, 1a, 1b, 1c.

ECONOMICS

Assistant Professor Hammond, Assistant Professor Weston

S 2. Elements of Economics.—This is a general course intended for beginners or for those who have had only high school work in economics. Emphasis is laid upon the principles of the subject and their application to present-day problems rather than upon a comparison of theories. A text is used as a basis for preparation but the work in the class is chiefly devoted to discussion, and in this connection it is hoped to utilize the treatment of current economic and social topics found in the public press. *Daily;* (*2 1-2*). Assistant Professor Hammond.

S 3. Economic and Commercial Geography.—This course is a study of the effects of geographical conditions on economic and commercial life. It deals with the physical features, resources, products, domestic and foreign trade, trade routes, transportation facilities, and industrial characteristics of the population of the United States and the leading foreign countries. *Four times a week;* (*2*). Assistant Professor Weston.

S 15. The Study of Society.—An elementary course dealing with the principles underlying social organization and with the nature and development of social institutions. Special attention is devoted to the development of the family, its place in modern social life, the influences surrounding home life and the forces at work tending to preserve or destroy the family. The social factors in education receive attention and the educational aspects of the subject are held in mind throughout the course. The last three weeks of the course are devoted to problems of social disintegration, particularly crime and pauperism, and in this connection an opportunity is given to members of the class to visit some of the charitable and correctional institutions not far distant. *Daily;* (*2 1-2*). Assistant Professor Hammond.

EDUCATION

Professor Dexter, Assistant Professor Hollister

S 1. Principles of Education.—The basis for a scientific

theory of education, critically considered, from the standpoint of the individual in his relation to the same. The more general problems of genetic psychology are studied, as well as those essential to the theory and art of teaching. The problems of school education. The making of a course of study. Method in teaching. The recitation Examinations. Grading and promotion. The various branches, considered as school subjects. *Daily;* (*2 1-2*). Professor DEXTER.

S 2. AMERICAN EDUCATIONAL HISTORY.—A brief historical survey of the growth of the American schools from the earliest times, together with a critical study of their present conditions. Contemporary educational problems in secondary and higher schools will be considered. *Twice a week;* (*1*). Professor DEXTER.

S 3. SCHOOL ORGANIZATION AND ADMINISTRATION.—A discussion of the general principles and laws under which Illinois schools are developing; legal status of the schools; school finances; material equipment; buildings and grounds, apparatus, libraries, etc.; employing and assigning teachers; the course of study and daily program; special problems of supervision; problems peculiar to high schools, as observed in visitation; some needed improvements. *Daily;* (*2 1-2*). Assistant Professor HOLLISTER.

S 4. METHODS IN SECONDARY SCHOOL SCIENCE.—Position of science in the curriculum; discussion of general method in science; special methods with reference to botany zoölogy, physics, chemistry, physiography; laboratory equipment; selection, purchase and use of materials and apparatus; laboratory manuals and note books; textbooks. *Three times a week;* (*1 1-2*). Assistant Professor HOLLISTER.

S 5. METHODS IN LANGUAGE AND HISTORY FOR SECONDARY SCHOOLS.—General principles of method as applied to the teaching of language and history; special methods in English composition and rhetoric and in the teaching of English literature; methods in language teaching, especially Latin and German; special method in teaching history; maps, reference books and text books. *Twice a week;* (*1*). Assistant Professor HOLLISTER.

S 6. PSYCHOLOGY APPLIED TO THE ART OF TEACHING.—A brief survey of genetic psychology, together with a critical study of the mental processes of sense perception, the formation of concepts, attention, suggestion, and imitation in their relation to the teaching process. *Three times a week;* (*1 1-2*). Professor DEXTER.

During the first three weeks of the session, Paul Henry Hanus,

Professor of the History and Art of Teaching at Harvard University, will give daily lectures in the Department of Education.

During the first week of the session Superintendent Kendall, of the Indianapolis (Indiana) schools, will give a series of lectures on "The Relation of the Superintendent to Schools and Teachers." For a full statement of these lectures, see page 9.

ENGLISH LITERATURE

Professor SIMONDS, Assistant Professor FULTON, Mr. PAUL.

S 3. SHAKSPERE. This subject will be approached from the point of view of characterization, technical construction, and linguistic difficulties. The following plays will be read: Love's Labor's Lost, Henry IV, As You Like It, Coriolanus, The Tempest. The Globe edition will be used. Lectures, recitations and reports. *Four times a week;* (*2*). Professor SIMONDS.

S 5. NINETEENTH CENTURY CRITICISM.—Some of the main features of modern English literary criticism will be traced in connection with the following authors: Coleridge, DeQuincey, Carlyle, Matthew Arnold. Lectures, recitations, and reports. *Daily;* (*2 1-2*). Assistant Professor FULTON.

S 6. AMERICAN LITERATURE.—Representative works of Irving, Poe, and the New England writers will be read and the significance of each author noted. Lectures, recitations, and reports. *Four times a week;* (*2*). Mr. PAUL.

S 7. NINETEENTH CENTURY POETRY.—Representative works of Wordsworth, Coleridge, Shelley, Keats, and Byron will be read, and the relation of the poets to their times will be considered. *Daily*; (*2 1-2*). Assistant Professor FULTON.

S 8. HIGH SCHOOL ENGLISH.—The books required for entrance to the University in English literature will be studied with reference to their use in the schoolroom. *Three times a week;* (*1 1-2*). Mr. PAUL.

S 9. THE ENGLISH NOVEL.—The development of English prose fiction in the Nineteenth Century will be traced through the works of some of the leading authors. *Four times a week;* (*2*). Professor SIMONDS.

S 10. CONTEMPORARY WRITERS.—Some of the tendencies of English and American writers of today will be noted as these find expression in books and periodicals. *Twice a week;* (*1*). Professor SIMONDS.

S 11. THE ENGLISH LANGUAGE.—Some of the most important principles of language growth will be traced with special reference to the usage of today. *Three times a week;* (*1 1-2*). Mr. PAUL.

During the third week of the session Professor J. V. Denney, of the Ohio State University, will deliver a series of lectures on English, for a more detailed statement of which see page 9.

FRENCH

Miss Jones

S 1. Elementary Course.—Study of grammar, daily exercise in pronunciation, composition and conversation. Easy readings. This course is designed primarily for beginners, but may also be taken by those who desire to review the elements of the language. *Daily; (2 1-2).*

S 2. Reading of Modern French.—A course in rapid reading of modern authors for students already well grounded in the elements of the language. Advanced composition. Conversation. *Daily*; *(2 1-2).*

S 3. Supplementary Course.—This course is designed to supplement the work of courses of S 1 or S 2, so that the total credit given may be equal to Course 1 or Course 2 for the first semester of the regular University year. The work will consist of conferences and additional reading under the direction of the instructor. Independent work of a more advanced character, adapted to the needs of each individual student, may also be done in connection with this course. *(1 1-2).*

GERMAN

Assistant Professor Brooks

S 1. Beginners' Course.—Study of inflections and reading of easy selections with exercises in translating into German, Special attention given to pronunciation and to practice in speaking. *Daily; (2 1-2).*

S 2. Easy Narrative Prose.—Reading of texts and work in syntax. This course may be taken by students who have completed the preceding one, or by others who satisfy the instructor that they have the requisite knowledge of German inflections. *Four times a week: (2).*

S 3. Supplementary Course.—This course is for independent work under the direction of the instructor. Two hours a week will be given to conferences. Competent students may thus supplement course S 1, so as to make it the eqivalent of course 1 of the University year, or they may supplement course S 2 so as to make it the equivalent of course 3 of the University year. Independent work of a more advanced character may also be done under this course. *Two hours a week; (1 1-2 or 2).*

GOVERNMENT, SCIENCE OF

Assistant Professor WESTON

S 1. CIVIL GOVERNMENT OF THE UNITED STATES. — This course presupposes an elementary knowledge of the structure of our government and is devoted to a study of the historical development and the practical working of our political institutions rather than to a study of the mere letter of our constitutional law. The course includes a study of national, state, and local institutions and will be specially adapted to the needs of those expecting to teach civil government in the schools. Some attention will be paid to the use of documentary and illustrative materials. *Daily;* (*3*).

HISTORY

Professor JOHNSON, Mr. ALVORD

S 1. THE UNITED STATES, 1783–1861. — This is an outline course designed primarily to meet the needs of teachers, but adapted to others who may wish a general view of the subject. *Daily;* (*2 1-2*). Professor JOHNSON.

S 2. THE HISTORY OF GREECE.—An outline course with special reference to the needs of teachers. *Daily;* (*2 1-2*). Mr. ALVORD.

S 3. THE MEDIÆVAL HISTORY OF ENGLAND.—It is the special purpose of this course to illustrate the characteristic institutions and movments of Mediæval Europe as they appeared on English soil. *Daily;* (*2 1-2*). Mr. ALVORD.

S 4. THE HISTORY OF RECONSTRUCTION. 1865-1876.—In connection with the lectures and general discussions, opportunity will be offered to individual students for a somewhat detailed study of special questions and episodes of the period. *Daily;* (*2 1-2*). Professor JOHNSON.

LATIN

Dr. NEVILLE

S E 1. COURSE FOR BEGINNERS.—This course furnishes either a rapid review for those familiar with the work covered, or offers an opportunity for beginning the study of the language. The most important portions of a preparatory Latin book will be covered. *Daily;* (*2 1-2*).

S 2. READING COURSE.—Such authors will be read as best meet the needs of the class. The works will all be of the degree of difficulty commonly used in high school work. It is probable that Cæsar and Cicero will be the authors selected. Considerable attention will

be paid to oral reading and to noun and verb syntax. An especial endeavor will be made to secure facility in rapid translation. This course may be taken either by those who have not read the authors studied, or by those who desire to review them. *Daily; (2 1-2).*

S 3. HORACE.—This course is offered for those students who are familiar with authors usually read in the high schools of our state, but who desire to secure an acquaintance with a larger body of Latin literature. It is believed that such acquaintance will be of substantial service in the class room, both from the added knowledge and from that larger view that comes from study of new and meritorious authors.

The Odes will probably be selected. If, however, it is the desire of the class, other University offerings may be substituted as Livy, Tacitus' Germania or Agricola, or Pliny's letters. *Daily; (2 1-2.)*

MANUAL TRAINING

Mr. IRONS, Mr. CURTISS

S 1. MANUAL TRAINING.—A lecture course on the theory and practice of manual training. This course takes up the problem of manual training in all its phases; the history of manual training in the United States and in Europe; the philosophy, the ethics and the psychology of the subject; the correlation of the subject with other school subjects; the methods of laying out courses and the methods of the recitation; the economics of the subject, the manual training problem in the city and country schools. A comprehensive course for Superintendents and Supervisors. *First six weeks*; *daily.* Mr. IRONS.

S 2. ELEMENTARY MANUAL TRAINING.—This course takes up the practical work of the elementary school. There will be exhibits of many lines of work of the public school courses. The work will consist of exercises and problems in the materials used—paper, cardboard, leather, cord, raffia, reed, thin wood, thin metals, etc. A course for the Elementary School Teacher *First six weeks; daily.* Mr. IRONS.

S 3. SHOP WORK OF THE SECONDARY SCHOOL.—Manual training related to the other school subjects. Mechanical drawing and applied design. Woodwork in thin wood and joinery. Wood carving based on the historical development of carving. Wood turning and work in thin metals. Arts and crafts work in several mediums. A course for the High School Teacher and the Craftsman. *First six weeks; daily.* Mr. IRONS.

The work of each of the above courses will consist of an hour's daily instruction, the students being allowed to work in the shops during other hours.

S 4. Wood Shop.—The work as far as possible is carried along the same lines as in our leading commercial shops. Beginning with the care and use of tools with which he is to work, the student is carried through the various operations of joint making, pattern making, and cabinet work. Regular University students who complete three hours work in this course will be given credit for Mechanical Engineering 1 (a). *Two to three hours daily; (2 to 3).* Mr. Curtiss.

MATHEMATICS

Assistant Professor Hall, Mr. Brenke, Dr. Coar

S E 1. Elementary Algebra.—This course will cover the regular work in algebra preparatory to college, but will be presented with special reference to the needs of high school teachers of algebra. Emphasis will be placed upon equations, both linear and quadratic, and the elementary notions of their loci will be developed. Students should bring any good high school text, Wentworth or Wells preferred. *Daily; (2 1-2).* Assistant Professor Hall.

S 2. Advanced Algebra.—This course will be the equivalent of that offered in the University on the same subject. The work will cover the following topics: Progression, binominal theorem, undetermined coefficients, partial fractions, permutations and combinations, imaginary quantities, logarithms and the theory of equations. The solutions of linear and quadratic equations, as well as those of higher degree will be considered, with special reference to the geometrical interpretation of these solutions. Students should bring any good text on college algebra they may possess. *Daily; (3).* Dr. Coar.

S E 3. Plane Geometry.—The work of this course will be substantially that of a course in plane geometry preparatory to college. Methods of presenting the subject matter will receive attention. Original demonstration and the arrangement by the student of the theorems and propositions as the subject is developed will be required. Any text, Wentworth or Wells preferred. *Daily; (3).* Mr. Brenke.

S 4. Solid Geometry.—This course will be equivalent to the one required of freshmen in the College of Literature and Arts in the University, special emphasis being placed upon original demonstration and the space relation of figures. The work covered will be

practically that found in Wentworth's Solid Geometry. Any standard text on geometry may be used, Wentworth or Wells being preferred. *Daily;* (*3*). Dr. COAR.

S 5. ANALYTICAL GEOMETRY—In this course effort will be made to call out and develop the student's faculty of analysis and to give him an insight into the meaning and application of algebraic equations. The subjects considered are algebraic and trigonometric conceptions ; coördinate systems and transformations ; the locus of an equation ; the equation of a locus ; the straight line ; the circle ; the conic sections ; tangents and normals ; poles and polars. Tanner and Allen's Analytical Geometry. *Daily ;* (*2 1-2*). Mr. BRENKE.

S 6. DIFFERENTIAL CALCULUS.—The subjects considered are variables and functions; limits; differentiation of explicit and implicit functions; successive derivatives; geometric meaning and application of derivatives; development in series; tangents and normals; maxima and minima; curvature. *Daily*; (*2 1-2*). Assistant Professor HALL.

S 7. INTEGRAL CALCULUS.—This course will include the study of the forms of integration, the preparation of functions for integration, and the formation of the differential equation. Practice work will be given in the integration of the complicated forms; rectification of plane curves; quadrature of plane surfaces; quadrature of surfaces of revolution; cubature of volumes; centers of gravity and moment of inertia. *Daily*; (*2 1-2*). Dr. COAR.

S 8. PLAIN TRIGONOMETRY.—The following topics will be taken up: Measurements of angles, trigonometric functions and their fundamental relations, functions of the sum and difference of two angles, functions of twice an angle and of half an angle, the use of logarithmic tables, solution of trigonometric equations, the relation between the sides of a triangle and the functions of its angles, the solutions of triangles. *Daily*; (*2*). Mr. BRENKE.

11. THEORY OF DETERMINANTS.—The general principles and properties of determinants, including determinants of special form and the functional determinants—Jacobians, Hessians, Wronskians The application of determinants to the theory of equations, analytical geometry including linear transformation. *Daily ;* (*2*). Assistant Professor HALL.

MUSIC

Assistant Professor BRENEMAN, Mrs. DANIELS, Mr. SCHWARTZ

S 1. COURSES FOR THE PIANO.—Instruction will be given both

of a preparatory and a collegiate grade adapted to the needs of those who may apply. Mrs. DANIELS.

S 2. VOCAL MUSIC.—Instruction will be given in preparatory and collegiate grades adapted to the needs of those who may apply. Assistant Professor BRENEMAN.

S 3. COURSE FOR THE VIOLIN.—The courses offered will be adapted to the needs of those who may apply. Mr. SCHWARTZ.

S 4. THEORY OF MUSIC.—(*a*) Elements of Harmony, a preparatory course for those who are about to begin the study of Harmony, as well as for those who wish to gain a more complete knowledge of the rudimentary principles of music.

(*b*) Harmony Review, for those who have already gained some knowledge of the subject.

(*c*) A Course in Analysis of Form. For instrumental students who desire to obtain a knowledge of the formal structure of Musical Composition. Mr. SCHWARTZ.

PHYSICS

Dr. WATSON, Mr. SCHULZ

S E 1. ELEMENTARY THEORY.—An elementary course in physics, requiring University entrance mathematics, will be given by demonstration, lecture and recitation. The course cannot be counted for University credit as it is of the grade of ordinary entrance work. *Daily*; (*2 1-2*). Dr. WATSON.

S E 2. ELEMENTARY LABORATORY. An elementary laboratory course designed to accompany the preceding course, in which selected quantitive experiments will be performed. The laboratory will be open for this course two hours daily. (*1 1-1*). Mr. SCHULZ.

S 3. PHYSICAL MEASUREMENTS.—A course in physical measurements equivalent to Physics 3 in the regular University course. For this work, elementary physics and trigonometry are required. (*1 1-2 or 3*). Mr. SCHULZ.

S 4 ADVANCED PHYSICAL MEASUREMENTS.—Laboratory work may be done in any of the lines offered under Physics 5 in the regular courses of the University catalog, by those who have completed one year's work in theory and laboratory. (*3*). Dr. WATSON.

PSYCHOLOGY

(See Education)

RHETORIC

Professor CLARK, Miss KYLE

S 2. RHETORIC AND THEMES.—The work in this course will be similar to the work in English Compositon required for freshmen in the University. Practice will be given by the writing of numerous themes which will be discussed in class, criticised by the instructor, and afterwards re-written or revised as circumstances require. Pearson's Composition. *Daily;* (*3*). Miss KYLE.

S 3. DAILY THEMES. Short themes, from one to two pages in length, every day, with exercises not to exceed four pages in length every fortnight. Bates' Talks on Writing English. (Second series). *Three meetings a week;* (*3*). Miss KYLE.

S 4. ENGLISH COMPOSITION AND LITERATURE.—The study of rhetorical principles as seen in literary masterpieces. The reading and analysis of the essays of Lamb, Arnold and DeQuincey. Two three-page themes a week, and one long exercise. *Four meetings a week*; (*3*). Professor CLARK.

S 5. LETTER WRITING.—A course in general correspondence with some attention to proof-reading and the preparation of manuscript for the press. *Three meetings a week;* (*1 1-2*). Professor CLARK.

ZOÖLOGY

Assistant Professor SMITH, Dr. PETERS

S E 1. INVERTEBRATE ZOÖLOGY.—This course will consist partly of a series of laboratory studies of types of invertebrate animals selected to include the forms most useful for high school work, and partly of a course of field studies of the animal life of the locality, designed primarily to enable the student to study intelligently the zoölogy of his own neighborhood. Instruction and practice will be given in the various forms of ordinary laboratory technique, and in the collection and preservation of animals for various purposes. Practice will be afforded in the identification of species, the study of life histories, and the observation of habits and behavior. Methods of instruction applicable to the high school will be discussed, especially in occasional conferences held outside the regular class hours. While the needs of the high school teacher will be kept prominently in mind in both the substance and the method of instruction, this course and the following will be so taught as to serve instead of Zoölogy 10 of the University catalog as an introduction to

major University work in this department. *Daily;* (2 *1-2*). Assistant Professor SMITH, Dr. PETERS.

S E 2. VERTEBRATE ZOÖLOGY.—This course is similar in character and purpose to the preceding, but is limited to vertebrate forms. Field work will be done especially on birds, in the observation of which modern methods of procedure and record will be used and taught. In the laboratory, methods of injection and dissection will be taught, and practice given in the use of manuals for the determination of native species. *Daily*; (*2 1-2*). Assistant Professor SMITH.

Either of the above courses may be taken separately or both may be taken together. For students desiring University credit, a course of related reading will be outlined, upon which, together with the laboratory work, an examination may be had at the end of the term.

Students wishing to receive full credit for the laboratory work of the regular University courses, Zoölogy 10 and Zoölogy 2, may arrange to take additional hours of laboratory work, receiving credit in proportion.

S 3. EXPERIMENTAL AND PHYSIOLOGICAL ZOÖLOGY. — The primary aim of this course is to train teachers and advanced students in the method of experiment as applied to zoölogical objects. For this purpose animals will be studied from the physiological point of view, and the methods of demonstrating their processes and functions will be taught in the laboratory. Some attention will also be given to selected topics in general physiology, including the reactions of organisms to physical and chemical stimuli. The laboratory work will be directed as far as possible to meet the needs of individuals. Opportunity will be afforded to teachers who desire to do so to develop whatever series of laboratory studies is most useful to them in their particular work. Provision will also be made for any one who is prepared to pursue a special subject of investigation in general physiology or experimental morphology, or who desires an introductory training for research work in these subjects. *Daily*; (*2 1-2*). Dr. PETERS.

UNIVERSITY OF ILLINOIS

LOCATION

The University of Illinois is situated in Champaign County, in the east central part of the state, between the cities of Champaign and Urbana, and within the corporate limits of the latter. It is one hundred and twenty-eight miles south of Chicago, at the junction of the Illinois Central, the Cleveland, Cincinnati, Chicago and St. Louis, and the Wabash railroads.

BUILDINGS AND GROUNDS

The work of the College of Engineering is done principally in *Engineering Hall*, which has a frontage of 200 feet, a depth of 76 feet on the wings, and 138 feet in the center; in the *Metal Shops*, a one story brick building, 50x250 feet; in the *Mechanical and Electrical Engineering Laboratory*, a two-story pressed brick building, 50x100 feet with a one-story wing 50x90 feet; in the *Wood Shop*. This is built in the form of a cross, the main portion being 200x46 feet with wings 52x80 feet. It contains a bench room, lathe room, machine room, lecture room, tool room and office, besides room for pattern storage and exhibition of work. The work in manual training will be done in this building; and in the *Hydraulic Laboratory* and in the *Central Heating Station*, a brick building 55x120 feet, which contains the apparatus used for heating the buildings on the campus.

Natural History Hall, where most of the work of the College of Science is carried on, is a three-story brick structure, 94x134 feet with a basement, in which are to

be found the departments of botany, zoölogy and mineralogy. The *Chemical Laboratory* is a building in the shape of a letter E with extreme dimensions 230x116 feet, and the *Astronomical Observatory* is a T-shaped building with equatorial room, four transit rooms, a clock room, a recitation room, a study room, and dark rooms for photographic purposes.

The College of Agriculture is to be found in the group of *Agricultural Buildings* which was completed in 1900 at a cost of $160,000. It consists of four separate structures built around an open court and connected by corridors. The main three-story structure is 248 feet long and from 50 to 100 feet in depth; and the three other buildings, two stories high, are 45x116 feet. There are in addition to these buildings a veterinary hall, four dwellings, three large barns and two greenhouses.

University Hall, in which the work of the College of Literature and Arts is mainly carried on, occupies three sides of a quadrangle, measuring 214 feet in front and 132 feet upon the wings. The School of Music is located in this building which is devoted almost exclusively to class rooms.

The Armory, 100x150 feet in one grand hall, gives ample space for company and regimental maneuvers and for large audiences upon special occasions.

The College of Law is comfortably located in the old Chemical Laboratory which has been remodeled especially for its purpose.

The *Library Building* is a stone structure 167x113 feet, with a tower 132 feet high. The main floor contains the reference room, the reading room, the conversation room, the Library School lecture room, and the delivery room. The book stack is in a rear wing of the building, separated from the rest of it by a fire-proof

wall. The Library in this building contains 50,000 volumes and 10,000 pamphlets. The reading room contains 411 periodicals. In addition the library of the State Laboratory of Natural History and that of the Agricultural Experiment Station contain about 9,500 volumes and 17,000 pamphlets. Both of these libraries are open to students of the Summer Session for a part of each day, as well as that of the Department of Education which contains nearly 1,000 volumes, mostly text books, and nearly 5,000 school reports, programs, courses of study and educational pamphlets.

The botanical, geological, physiological, and zoölogical laboratories in Natural History Hall, the physical laboratory in Engineering Hall, and the phychological laboratory in University Hall, will also be at the service of the summer school students. The entire University equipment in so far as it is needed will be used in connection with the work of the Summer Session.

ATHLETICS

The University authorities recognize the necessity of providing the students with some adequate means for exercise during their attendance. To that end it has been arranged that both the men's and the women's gymnasium shall be open for certain hours every day. The former, a magnificient new structure 100x150 feet was completed only last spring. It contains a 15 lap running track, gymnasium floor the full size of the building, adequate locker and bath facilities, besides a swimming pool 70x35 feet. All will be at the disposal of the students of the Summer Session.

The tennis court will be kept in condition, and it is suggested that those interested in the game bring rackets and balls.

BOARD AND LODGING

The fact that the larger part of the usual University community will be away at the time of the Summer Session will make boarding accommodations plentiful. The Young Men's and Young Women's Christian Associations of the University will prepare a list of boarding places which can be recommended, and they will aid students in securing desirable locations.

Board can be obtained in private families at from $3 to $4 a week and in clubs at a somewhat lower rate.

Double rooms in pleasant localities near the University may be had at from $6 to $10 a month.

For further information on any matter connected with the Summer Session, address the registrar or,

THOMAS ARKLE CLARK, Director,
Urbana, Illinois.